Listings of Claims:

1. (Original)   A voice feature extraction device comprising:

a noise reduction system coefficient calculation unit that beforehand calculates a noise reduction system coefficient of a noise reduction system to be used, and

an input voice power spectrum calculation unit that calculates a power spectrum vector of a processed input voice, wherein

the noise reduction system that is set to the coefficient calculated by the noise reduction system coefficient calculation unit executes an operation processing to the power spectrum vector acquired by the input voice power spectrum calculation unit.

2. (Original)   A voice feature extraction device as claimed in claim 1, wherein the noise reduction system coefficient calculation unit includes a filter coefficient calculation unit that determines a filter coefficient of the noise reduction system to be used, and a power calculation unit that converts the filter coefficient acquired by the filter coefficient calculation unit into the power spectrum vector.

3. (Original)   A voice feature extraction device as claimed in claim 2, wherein the filter coefficient calculation unit executes an adaptive control to a signal having an input voice signal and a simulated voice signal added, and acquires a tap coefficient to thereby calculate the filter coefficient.

4. (Original)   A voice feature extraction device as claimed in claim 3, wherein a specific gain adjustment is executed to the simulated voice signal.

5. (Original)   A voice feature extraction device as claimed in claim 1, wherein the voice feature extraction device is applied to a voice recognition device of a vehicle navigation system.

6. (Original)   A voice feature extraction device as claimed in claim 1, wherein the voice feature extraction device is applied to a speaker recognition device.

7. (Original)   A voice feature extraction device as claimed in claim 1, wherein the voice feature extraction device is applied to a loudness compensation system.

8. (Original)   A voice feature extraction device comprising:

a noise reduction system coefficient calculation unit that beforehand calculates a noise reduction system coefficient of a noise reduction system to be used,

a microphone that collects voices of a user,

a window function operation unit that samples a voice signal inputted from the microphone, and prevents generation of high frequency components caused by a data jump at intervals of each frame,

an input voice power spectrum calculation unit that calculates a power spectrum vector of the input voice signal processed by the window function operation unit, and

a noise reduction system that sets the power spectrum vector acquired by the input voice power spectrum calculation unit to the coefficient acquired by the noise reduction system coefficient calculation unit, and executes an operation processing.

9. (Original)   A voice feature extraction device as claimed in claim 8, wherein the noise reduction system coefficient calculation unit includes a filter coefficient calculation unit that determines a filter coefficient of the noise reduction system to

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be used, and a power calculation unit that converts the filter coefficient acquired by the filter coefficient calculation unit into the power spectrum vector.

10. (Original)   A voice feature extraction device as claimed in claim 9, wherein the filter coefficient calculation unit executes an adaptive control to a signal having an input voice signal and a simulated voice signal added, and acquires a tap coefficient to thereby calculate the filter coefficient.

11. (Original)   A voice feature extraction device as claimed in claim 9, wherein the filter coefficient calculation unit executes a specific gain adjustment to the simulated voice signal, executes an adaptive control to a signal having the input voice signal and the gain-adjusted simulated voice signal added, and acquires a tap coefficient to thereby calculate the filter coefficient.

12. (Original)   A method of extracting voice features comprising the steps of:
calculating in advance a noise reduction system coefficient of a noise reduction system to be used, and
calculating a power spectrum vector of a processed input voice,
wherein the noise reduction system having the calculated noise reduction system coefficient set executes an operation processing to the power spectrum vector, and extracts the voice features.

13. (Original)   A method of extracting voice features as claimed in claim 12, wherein the noise reduction system coefficient is calculated by determining a filter coefficient of the noise reduction system to be used, and by converting the determined filter coefficient into the power spectrum vector.

14. (Original)   A method of extracting voice features as claimed in claim 13, wherein the filter coefficient is calculated by executing an adaptive control to a

signal having an input voice signal and a simulated voice signal added to acquire a tap coefficient.

15. (Original)   A method of extracting voice features as claimed in claim 14, wherein a specific gain adjustment is executed to the simulated voice signal.

16. (Original)   A method of extracting voice features comprising the steps of:

calculating in advance a noise reduction system coefficient of a noise reduction system to be used,

sampling a voice signal inputted from a microphone,

executing a processing to prevent generation of high frequency components of the input voice signal sampled,

calculating a power spectrum vector of the signal that is processed to prevent generation of high frequency components, and

calculating a voice feature from the power spectrum vector by means of the noise reduction system having the calculated noise reduction system coefficient set.

17. (Original)   A method of extracting voice features as claimed in claim 16, wherein the noise reduction system coefficient is attained by:

adding a surrounding voice signal inputted from the microphone and a specific simulated voice signal,

executing an adaptive control to the added signal to thereby calculate a filter coefficient, and

applying a fast Fourier transform to the filter coefficient to thereby calculate the power spectrum vector.

18. (Original)   A voice feature extraction device comprising:

a microphone that collects a surrounding voice signal;

a simulated voice signal generation unit that generates a specific simulated voice signal;

a gain adjustment unit that adjusts a gain of the simulated voice signal;

an adder that adds the voice signal collected by the microphone and the gain-adjusted simulated voice signal;

a delay processing unit that delays the gain-adjusted simulated voice signal by a specific time;

an adaptive filter that executes an adaptive control on the basis of the signal added by the adder and the simulated voice signal delayed by the delay processing unit;

an FFT operation unit that executes a fast Fourier transform to a filter coefficient attained by the adaptive control of the adaptive filter;

a power calculation unit that calculates a power spectrum vector from a signal attained by the FFT operation unit; and

a noise reduction system having the power spectrum vector calculated by the power calculation unit set as a noise reduction coefficient.